

REMARKS

Claim Amendments

Claims 1 and 19 have been amended to include the limitations that, “the reflective metal layer is in contact with the haze-prevention layer”, and “the haze-prevention layer is in contact with the substrate”. Support for these amendments may be found, at least, in claim 21 of the application as filed

Nonstatutory Double Patenting Rejection Over Iacovangelo ‘032 Claims

Claims 1, 4, 5, 7, 8, 10, 11, and 15-18 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-38 of U.S. Patent No. 6,420,032 to Iacovangelo (“Iacovangelo ‘032”). 6/27/06 Office Action, page 3, paragraph no. 8. Specifically, the Office Action states,

* * * Although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of the claims of the patent overlaps that of the instant claims, rendering them obvious over each other.

The claims of the patent disclose all of the limitations as recited in the instant claims. However, independent claims 1, 17, and 35 of the patent disclose the transparent metal oxide layer; whereas claims 1, 19, and 21 disclose a haze-prevention layer. Thus, the scope of the claims of the patent overlaps that of the instant claims, rendering them obvious over each other.

6/27/06 Office Action, page 3, paragraph no. 8 and following paragraph.

Applicants respectfully traverse this rejection to the extent that it may be applicable to the claims as currently amended. Specifically, Applicants respectfully disagree with the Examiner’s apparent argument that the transparent metal oxide layer of the Iacovangelo ‘032 is equivalent to Applicants’ haze-prevention layer. Furthermore, Applicants note that the Iacovangelo claims do not teach or suggest a layer meeting the positional and compositional limitations of Applicants’ claimed protective layer.

Iacovangelo's Claimed Metal Oxide Layer is Compositionally Distinct from Applicants' Haze Prevention Layer

In her discussion of this rejection, the Examiner appears to suggest the equivalence of the transparent metal oxide layer of the Iacovangelo '032 claims and the haze-prevention layer of Applicants' claims.

The claims of the patent disclose all of the limitations as recited in the instant claims. However, independent claims 1, 17, and 35 of the patent disclose the transparent metal oxide layer; whereas claims 1, 19, and 21 disclose a haze-prevention layer. Thus, the scope of the claims of the patent overlaps that of the instant claims, rendering them obvious over each other.

6/27/06 Office Action, page 3, next-to-last paragraph. Applicants dispute any alleged equivalence of Iacovangelo's '032 metal oxide layer and Applicants' haze-prevention layer. Specifically, Applicants note that the metal oxide layer of the Iacovangelo '032 claims does not satisfy the compositional limitation of Applicants' haze-prevention layer. Furthermore, Applicants disagree with the apparent assertion that the standard for obviousness is whether "the scope of the claims of the patent overlaps that of the instant claims". This appears to suggest that if claims share some limitations, they are obvious over each other. This is not the standard for obviousness. Instead, a prima facie case of obviousness requires, inter alia, that the reference(s) teach or suggest all limitations of the rejected claims.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all limitations of the claim be taught or suggested by the prior art. *See, e.g.*, MPEP 2143.03; *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003); *In re Royka*, 490 F.2d 981, 985 (C.C.P.A. 1974). Applicants' independent claim 1 includes the limitation that the haze-prevention layer that "comprises a plasma-polymerized organosilicone". The metal oxide layer of Iacovangelo '032 independent claims 1, 17, and 35 does not satisfy this limitation. Specifically, the metal oxide layer of Iacovangelo '032 claims 1, 17, and 35 is described as "including at least one compound selected from

the group consisting of ZnO, indium doped zinc oxide, and aluminum doped zinc oxide.” There is no teaching or suggestion in the Iacovangelo ‘032 claims to include a plasma-polymerized organosilicone in the metal oxide layer. Accordingly, the metal oxide layer of the Iacovangelo ‘032 claims does not satisfy the compositional limitation of Applicants’ claim 1 haze-prevention layer.

The Examiner appears to concede this failure in the “Response to Arguments” section of the Office Action:

In response to Applicants argument that there is no compositional overlap between the transparent metal oxide layer of the claims of Iacovangelo ‘032 and the instantly claimed haze-prevention layer, it is noted that the obviousness-type double patenting is based on the overlapping scopes comprising other layers in common between the two inventions, and not compositional overlap between the metal oxide layer and the haze-prevention layer. Thus, the obviousness double patenting rejection is sustained.

6/27/06 Office Action, page 7, third paragraph. The Examiner thus appears to be arguing that even though there is no compositional overlap between the reference metal oxide layer and Applicants’ haze-prevention layer”, the presence of “other layers in common between the two inventions” is sufficient to support a prima facie case of obviousness. In other words, the Examiner appears to be impermissibly ignoring the explicit haze-prevention layer compositional limitation of Applicants’ claim 1. By failing to show that each limitation of Applicants’ independent claim 1 is taught or suggested by the reference claims, the Examiner fails to make a prima facie case of obviousness against claim 1. Given that claims 4, 5, 7, 8, 10, 11, and 15-18 each depend ultimately from and further limit claim 1, they, too, are further patentable over the claims of Iacovangelo ‘032.

Iacovangelo ‘032 Claims Do Not Teach Applicants’ Claim 1 Protective Layer

Applicants’ claims are further patentable over the claims of Iacovangelo ‘032 because the Iacovangelo ‘032 claims do not teach or suggest Applicants’ claim 1 protective layer.

Applicants’ claim 1 requires the presence of “a protective layer comprising the

plasma decomposition product of an oxidant and a reactant gas selected from silanes, disilanes, and organosilicon compounds; wherein the reflective layer is interposed between the haze-prevention layer and the protective layer; and wherein the protective layer is in contact with the reflective metal layer". The claims of Iacovangelo '032 do not teach or suggest layered structure having a layer satisfying all the limitations of Applicants' claim 1 protective layer.

Assuming for the sake of argument (but not conceding) that the "stress reducing interlayer" of Iacovangelo '032 claim 9 satisfies the compositional limitations of Applicants' claim 1 protective layer, it does not satisfy the positional limitations. Specifically, the Iacovangelo '032 claim 9 "stress reducing layer" is located "between the substrate and the metal layer" (claim 8). From a perspective in which the substrate is at the bottom, the "stress reducing layer" is therefore above the substrate and below the metal layer. In contrast, from a perspective in which the substrate is at the bottom, Applicants' claim 1 protective layer is above the reflective metal layer ("haze-prevention layer [is] interposed between the substrate and the reflective metal layer"; "the reflective layer is interposed between the haze-prevention layer and the protective layer"). Thus, the Iacovangelo '032 claim 9 "stress reducing layer" does not satisfy the positional limitation of Applicants' claim 1 protective layer.

Furthermore, assuming for the sake of argument (but not conceding) that the metal oxide layer of Iacovangelo claims 1 ("transparent metal oxide layer"), 17 ("transparent metal oxide layer"), and 35 ("ultraviolet radiation absorption layer") satisfies the positional limitation of Applicants' claim 1 protective layer, it does not satisfy the compositional limitations. As noted above, the "metal oxide layer" of Iacovangelo '032 is described as "including at least one compound selected from the group consisting of ZnO, indium doped zinc oxide, and aluminum doped zinc oxide". There is no teaching or suggestion to include "the plasma decomposition product of an oxidant and a reactant gas selected from silanes, disilanes, and organosilicon compounds" in the "metal oxide layer" of Iacovangelo '032. Thus, the "metal oxide layer" of the Iacovangelo '032 independent claims does not satisfy the compositional limitation of Applicants' claim 1 protective layer.

In short, the Iacovangelo '032 claims do not teach or suggest a layered structure having a layer that meets both the positional and compositional limitations of Applicants' claim 1 "protective layer". Claim 1 is therefore further patentable over the claims of Iacovangelo '032. Given that claims 4, 5, 7, 8, 10, 11, and 15-18 each depend ultimately from and further limit claim 1, they, too, are further patentable over the claims of Iacovangelo '032.

Summary

For all of the above reasons, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1, 4, 5, 7, 8, 10, 11, and 15-18 under the judicially created doctrine of obviousness-type double patenting over claims 1-38 of Iacovangelo '032.

Claim Rejection Under 35 U.S.C. § 102(e) Over Iacovangelo '032

Claims 1, 7, 8, 10, 11, 16, 17, 19, 21, and 22 stand rejected under 35 U.S.C. § 102(e), as allegedly anticipated by Iacovangelo '032. 6/27/06 Office Action, page 4, paragraph no. 10. Applicants respectfully traverse this rejection to the extent that it may be applicable to the claims as currently amended.

Anticipation requires that all of the limitations of the claim be found within a single prior art reference. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). Applicants' independent claims 1, 19, and 21 each require a reflective metal layer that (1) must be below and in direct contact with a layer meeting the compositional limitations of Applicants' protective layer, and (2) must be above and in direct contact with a layer meeting the compositional limitations of Applicants' haze-prevention layer. Iacovangelo '032 does not teach such a layer.

Iacovangelo '032 teaches two types of layers that may be metallic. The first type of Iacovangelo '032 layer that may be metallic is the adhesion promoting layer 2, which may include "at least one of Ag and Al". Iacovangelo '032, col. 5, lines 36-37. However, the adhesion promoting layer 2 is positioned directly below the UV absorption (metal oxide) layer 3. *See, e.g.*, Iacovangelo '032 Figures 3A-E. This is not surprising

given that the function of the adhesion promoting layer 2 is to promote adhesion of the UV absorption (metal oxide) layer 3 to the substrate 1. *See, e.g.*, Iacovangelo ‘032 abstract. So, the metallic adhesion promoting layer 2 of Iacovangelo ‘032 is not taught as being below and in direct contact with a layer having the same composition as Applicants’ protective layer. Furthermore, the adhesion promoting layer 2 of Iacovangelo ‘032 is “transparent”. *See, e.g.*, Iacovangelo ‘032 abstract. It is therefore not “reflective” as expressly required for Applicants’ reflective metal layer.

The second type of Iacovangelo ‘032 layer that may be metallic is the interlayer 6, which may comprise aluminum. *See, e.g.*, Iacovangelo ‘032, col. 6, lines 65-66. In the only figures in which it is employed, this layer is above and in direct contact with UV absorption (metal oxide) layer 3. Iacovangelo ‘032, Figures 3C and 3E. The purpose of interlayer 6 is to “relieve[] stress between layers 3 and 4 that occurs due to different coefficients of thermal expansion, different ductility, and different elastic modulus of layers 3 and 4”. Iacovangelo ‘032, col. 6, lines 62-65. Thus, interlayer 6 must be above UV absorption (metal oxide) layer 3. Iacovangelo ‘032 therefore does not teach that this interlayer 6 may be in above and in direct contact with a layer meeting the compositional requirements of Applicants’ haze-prevention layer.

In short, Applicants’ independent claims 1, 19, and 21 require a reflective metal layer that (1) must be below and in direct contact with a layer meeting the compositional limitations of Applicants’ protective layer, and (2) must be above and in direct contact with a layer meeting the compositional limitations of Applicants’ haze-prevention layer. Iacovangelo ‘032 does not teach a layered structure having a metallic layer meeting these limitations. Given that claims 7, 8, 10, 11, 16, 17, and 22 each depend from or further limit either claim 1 or claim 21, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1, 7, 8, 10, 11, 16, 17, 19, 21, and 22 under 35 U.S.C. § 102(e) over Iacovangelo ‘032.

Claim Rejection Under 35 U.S.C. § 102(b) Over Iacovangelo ‘694

Claims 1, 7, 8, 10, 11, 16, 17, 19, 21, and 22 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 6,261,694 of Iacovangelo

(“Iacovangelo ‘694”). 6/27/06 Office Action, page 5, paragraph no. 11. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Anticipation requires that all of the limitations of the claim be found within a single prior art reference. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). Applicants’ independent claims 1 and 19 (as currently amended), and 21 (as previously presented) each require the presence of a reflective metal layer which is (1) located above and in direct contact with a haze-prevention layer comprising a plasma-polymerized organosilicone, and (2) located below and in direct contact with a protective layer comprising “the plasma decomposition product of an oxidant and a reactant gas selected from silanes, disilanes, and organosilicon compounds”. Iacovangelo ‘694 does not teach such a layer.

In general, Iacovangelo ‘694 teaches a layered structure comprising “a polymeric base, a first zinc oxide (ZnO), aluminum zinc oxide (AZO) or indium zinc oxide (IZO) ultraviolet radiation absorption layer, a silver (Ag) or aluminum (Al) infrared radiation reflection layer, and a second IZO, AZO or ZnO ultraviolet radiation absorption layer”. Iacovangelo ‘694 teaches two types of layers that may be metallic. The first type of layer in Iacovangelo ‘694 that may be metallic is the “IR reflection layer 3”, which “preferably comprises Ag”. Iacovangelo ‘694, col. 6, lines 1-8. In layer order Figures 2A-B and 3A-3F, IR reflection layer 3 is always situated above and in direct contact with UV absorption (metal oxide) layer 2, which comprises indium zinc oxide, aluminum zinc oxide, or indium zinc oxide. Iacovangelo ‘694, col. 2, lines 16-22. Iacovangelo ‘694 does not teach a layered structure in which the IR reflection layer 3 is located above and in direct contact with a layer comprising a plasma-polymerized organosilicone, as required for Applicants’ claim 1, 19, and 21 reflective metal layer.

The second type of layer in Iacovangelo ‘694 that may be metallic is the “adhesion promoting layer 8”, which may comprise aluminum or silver. Iacovangelo ‘694, col. 7, lines 41-46. The purpose of “adhesion promoting layer 8” is to promote adhesion between substrate 1 and UV absorbing layer 2. Iacovangelo ‘694, lines 41-43.

Given this purpose, it is not surprising that the “adhesion promoting layer 8” is shown and described as located below and in direct contact with UV absorbing layer 2. Iacovangelo ‘694, Figure 3F; col. 7, lines 50-52. Iacovangelo ‘694 does not teach a layered structure in which “adhesion promoting layer 8” is located below and in direct contact with a layer comprising “the plasma decomposition product of an oxidant and a reactant gas selected from silanes, disilanes, and organosilicon compounds”, as required for the reflective metal layer of Applicants’ claims 1, 19, and 21.

In short, Iacovangelo ‘694 does not teach a layered structure meeting the compositional and positional limitations of the reflective metal layer of Applicants’ independent claims 1, 19, and 21. Iacovangelo ‘694 thus fails to anticipate Applicants’ independent claims 1, 19, and 21. Given that claims 7, 8, 10, 11, 16, 17, and 22 each depend from and further limit claim 1 or claim 19, they, too, are not anticipated by Iacovangelo ‘694. Accordingly, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1, 7, 8, 10, 11, 16, 17, 19, 21, and 22 under 35 U.S.C. § 102(b) over Iacovangelo ‘694.

Claim Rejections Under 35 U.S.C. § 103(a) over Iacovangelo ‘694

Claims 4, 5, 15, and 18 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Iacovangelo ‘694 as applied to claim 1 above. 6/27/06 Office Action, page 6, paragraph no. 13. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

As describe above, Iacovangelo does not teach or suggest a layered structure having a layer meeting the compositional and positional limitations of the reflective metal layer of Applicants’ independent claim 1. Iacovangelo ‘694 thus fails to support a prima facie case of obviousness against claim 1. Given that claims 4, 5, 15, and 18 each depend ultimately from and further limit claim 1, they, too, are patentable over Iacovangelo.

Furthermore, with respect to claim 18, it is not obvious to use the layered structures of Iacovangelo ‘694 as automotive headlight reflectors because the Iacovangelo ‘694 structures are expressly designed for use as automotive windows that

necessarily require some transparency to visible light. *See, e.g.*, Iacovangelo '694 col. 1, lines 4-7; col. 7, lines 19-27. In contrast, automotive headlight reflectors require that the article reflect essentially all (transmit essentially none) of the visible light from the headlight. For this reason alone, one would not select the Iacovangelo '694 structures for use as automotive headlight reflectors. Claim 18 is therefore further patentable over Iacovangelo '694.


For all of the above reasons, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 4, 5, 15, and 18 under 35 U.S.C. § 103(a) over Iacovangelo '694.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-3619 maintained by Assignee.

Respectfully submitted,

CANTOR COLBURN LLP
Applicants' Attorneys

By: 
J. Michael Buchanan
Registration No. 44,571

Date: August 22, 2006
Customer No.: 23413
Telephone: (860) 286-2929